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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,396	04/24/2001	Pekka Immonen	602.344USW1	6540

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EXAMINER

MOORE, JAMES K

ART UNIT	PAPER NUMBER
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2686

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DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/841,396

Applicant(s)

IMMONEN ET AL.

Examiner

James K Moore

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 15-28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 15, 16 and 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huotari et al. (WO 96/13949) in view of Nguyen (U.S. Patent No. 5,995,848).

Regarding claim 15, Huotari discloses a method for implementing a service in a telecommunication system comprising a mobile subscriber network, a mobile switching center (VMSC) connected to the mobile subscriber network, and an intelligent network connected to the mobile subscriber network. See page 8, lines 15-28. The mobile switching center is provided with a service control function (SCF) which is connected via interface to a call control function (CCF). See page 9, lines 1-9 and page 10, lines 11-35. The call control function is controlled by the service control function at an intelligent network interface. See page 15, lines 9-13. Queries are made by the call control function to obtain information from the service control function, and instructions are

received by the call control function from the service control function. See page 14, line 2 through page, line 16.

Huotari does not disclose that the interface between the SCF and the CCF is an internal interface, or that a call completion to busy subscriber remote user free message is received by the mobile switching center indicating that a first call party is free, or that the call control function is controlled by the service control function at the intelligent network interface to set up a call between the first call party and a second call party.

Nguyen discloses that a service control function may be co-located with a mobile switching center, thereby doing away with the requirement for a service control point (SCP). See col. 6, lines 1-4. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Huotari with this teaching of Nguyen, such that the service control function is located within the mobile switching center, in order to eliminate the requirement for a separate service control point. Since Huotari's call control function is located within the mobile switching center, Huotari as modified by Nguyen would result in an internal interface between the service control function and the call control function.

Nguyen also discloses a method of completing calls to busy mobile subscribers in a radio telecommunications network. Nguyen discloses a mobile switching center (G-MSC 37) which receives a call completion to busy subscriber remote user free message (LOCREQ Return Result 201) indicating that a first call party is free. See col. 7, line 21 through col. 9, line 41. Nguyen also discloses that the service control function controls a call control function at the mobile switching center to set up a call between a first call

party and a second call party. See col. 9, lines 18-41. These features of Nguyen facilitate call completion to a busy mobile subscriber. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Huotari with Nguyen, such that a call completion to busy subscriber remote user free message is received by the mobile switching center indicating that a first call party is free, and the call control function is controlled by the service control function at the intelligent network interface to set up a call between the first call party and a second call party, in order to facilitate call completion to a busy mobile subscriber.

Regarding claim 16, Huotari in view of Nguyen teaches all of the limitations of claim 15, and Huotari also discloses that a reference to the service control function (a Service Key) is added to triggering data of the call control function. See page 11, line 23 through page 12, line 1, and page 14, line 2 through page 15, line 16.

Regarding claim 20, Huotari in view of Nguyen teaches all of the limitations of claim 15, and Huotari also discloses that data for triggering of intelligent network services (trigger keys) are added to subscriber information returned from a VLR to the call control function at the beginning of a call setup if any GSM supplementary services implemented via an intelligent network interface are active for a subscriber in the VLR subscriber data. See page 12, line 33 through page 13, line 28 and page 14, lines 2 through page 15, line 16.

Regarding claim 21, Huotari in view of Nguyen teaches all of the limitations of claim 15, and Huotari also discloses that an indication of those events (detection points

DP) in the call control function in which it is necessary to make a service control function query is added to triggering data. See page 14, line 2 through page 15, line 16.

Regarding claim 22, Huotari in view of Nguyen all of the limitations of claim 15, and Huotari also discloses that the intelligent network interface for call control is an INAP interface. See Figure 2.

Regarding claim 23, Huotari discloses a system for implementing a service in a telecommunication system comprising a mobile subscriber network, a mobile switching center (VMSC) connected to the mobile subscriber network, and an intelligent network connected to the mobile subscriber network. See page 8, lines 15-28. The mobile switching center is provided with a service control function (SCF). See page 9, lines 1-9 and page 10, lines 11-35. The service control function comprises means for controlling a call control function (CCF) and an intelligent network interface. See page 15, lines 9-13. The call control function comprises means for making queries and means for receiving instruction from the service control function. See page 14, line 2 through page, line 16.

Huotari does not disclose that the mobile switching center is provided with means to receive a call completion to busy subscriber remote user free message indicating that a first call party is free, or that the intelligent network interface is used to set up a call between the first call party and a second call party.

Nguyen also discloses a system for completing calls to busy mobile subscribers in a radio telecommunications network. Nguyen discloses a mobile switching center (G-MSC 37) which receives a call completion to busy subscriber remote user free message

(LOCREQ Return Result 201) indicating that a first call party is free. See col. 7, line 21 though col. 9, line 41. Nguyen also discloses that the service control function controls a call control function at the mobile switching center to set up a call between a first call party and a second call party. See col. 9, lines 18-41. These features of Nguyen facilitate call completion to a busy mobile subscriber. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Huotari with Nguyen, such that the mobile switching center is provided with means to receive a call completion to busy subscriber remote user free message indicating that a first call party is free, and that the intelligent network interface is used to set up a call between the first call party and a second call party, in order to facilitate call completion to a busy mobile subscriber.

Regarding claim 24, Huotari in view of Nguen teaches all of the limitations of claim 23, and Huotari also discloses that the mobile subscriber network may be a digital mobile subscriber network. See page 7, line 31 through page 8, line 4.

Regarding claim 25, Huotari in view of Nguyen teaches all of the limitations of claim 23, and Huotari also discloses that the mobile subscriber network may be a GSM network. See page 7, line 31 through page 8, line 4.

Regarding claim 26, Huotari in view of Nguyen teaches all of the limitations of claim 23. Huotari does not disclose that the service control function is an internal program block or other internal software component in the mobile switching center. However, Nguyen discloses that a service control function may be an internal software component of a mobile switching center, thereby doing away with the requirement for a

service control point (SCP). See col. 6, lines 1-4. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Huotari with this teaching of Nguyen, such that the service control function is an internal software component of the mobile switching center, in order to eliminate the requirement for a separate service control point.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huotari et al. in view of Nguyen as applied to claim 15 above, and further in view of Pearce ("CS-2 Enhancements for User Interaction").

Regarding claim 17, Huotari in view of Nguyen teaches all of the limitations of claim 15, but does not teach that a message transmitted from the service control function to the call control function is based on a method or message of the call control function according to CS-2. Instead, Huotari discloses that messages transmitted from the service control function to the call control function are based on Intelligent Network Capability Set 1 (CS-1).

Pearce relates to the same field of endeavor as Huotari and Nguen, i.e., intelligent network services. Pearce discloses that Intelligent Network Capability Set 2 (CS-2) provides several significant advantages are CS-1, namely, it makes more efficient use of network resources, it provides greater flexibility, and a wider repertoire of information can be communicated via signaling messages. See pages 1 and 5. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Huotari in view of Nguyen with Pearce, such that a message

transmitted from the service control function to the call control function is based on a method or message of the call control function according to CS-2, in order to make more efficient use of network resources, provide greater flexibility, and provide the ability to communicate a wider repertoire of information via signaling messages.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huotari et al. in view of Nguyen as applied to claim 15 above, and further in view of Humphrey ("Interworking and the IN Platform: Detailing the Development of the GSM CAMEL Standard for Interworking IN").

Regarding claim 18, Huotari in view of Nguyen teaches all of the limitations of claim 15, but does not teach that the message transmitted from the service control function to the call control function is based on a method or message of the call control function according to CAMEL Phase 3. Humphrey is directed to the same field of endeavor as Huotari and Nguyen, i.e., intelligent networks. Humphrey teaches that the CAMEL standard enables a GSM network to provide intelligent network services to subscribers. See the sections titled "INTRODUCTION" and "WHAT IS CAMEL?" Humphrey does not teach the benefits of Phase 3, however, one of ordinary skill in the art would have recognized that Phase 3 would inherently provide greater benefits than Phase 1 and 2 since it is an inherent improvement over earlier phases. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Huotari in view of Nguyen with Humphrey, such that the message transmitted from the service control function to the call control function is based on a method or

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message of the call control function according to CAMEL Phase 3, in order to enable a GSM network to provide intelligent network services.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huotari et al. in view of Nguyen as applied to claim 15 above, and further in view of Lim et al. ("A Study on Call Modeling for AIN/B-ISDN Integration").

Regarding claim 19, Huotari in view of Nguyen teaches all of the limitations of claim 15, but does not teach that a message transmitted from the service control function to the call control function is based on a method or message of the call control function according to AIN call party handling.

Lim is directed to the same field of endeavor as Huotari and Nguyen, i.e., intelligent network services. Lim teaches that AIN technology has the advantages of fast and on-demanding service deployment and network management. See Section 1, Introduction. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Huotari in view of Nguyen with the teaching of Lim, such that a message transmitted from the service control function to the call control function is based on a message of the call control function according to AIN call party handling, in order to provide the telecommunication system with fast and on-demanding service deployment and network management.

7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huotari et al. in view of Nguyen as applied to claim 23 above, and further in view of Farooqui ("An Agent-Based Model of a Distributed IN Platform").

Regarding claim 27, Huotari in view of Nguyen teaches all of the limitations of claim 23, but does not teach that the service control function is connected to the mobile switching center via a Corba interface. Farooqui is directed to the same field of endeavor as Huotari and Nguyen, i.e., intelligent networks. Farooqui discloses the use of CORBA as a distributed processing layer in an intelligent network, including as an interface between a switch and a node providing a service control function. Farooqui teaches that an advantage of using a standardized distributed processing platform such as CORBA as an interface between switches and service nodes is that it allows the service nodes to be developed without regard to the type of switches used in the communications network. See pages 4, 8, and 10. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Huotari in view of Nguyen with Farooqui, such that the service control function is connected to the mobile switching center via a Corba interface, in order to allow the service control function to be developed independently of the type of mobile switching center with which it is communicating with.

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huotari et al. in view of Nguyen as applied to claim 23 above, and further in view of Barnhouse et al. (U.S. Patent No. 6,418,461).

Regarding claim 28, Huotari in view of Nguyen teaches all of the limitations of claim 23, but does not teach that the service control function is a Java-language execution environment. Barnhouse is directed to the same field of endeavor as Huotari, i.e., intelligent networks. Barnhouse teaches that an advantage of using a service logic execution environment (SLEE) based on the Java language is that it allows for platform portability, ubiquity of development tools and skill sets, and support for existing protocols. See col. 13, lines 20-32. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Huotari in view of Nguyen with the teaching of Barnhouse, such that the SLEE of the service control function is a Java-language execution environment, in order to allow platform portability, and provide ubiquity of development tools and skill sets and support for existing protocols.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken Moore, whose telephone number is (703) 308-6042. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached at (703) 305-4379.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ken Moore
2/20/04

JKM

Marsha D Banks-Harold
MARSHA D. BANKS-HAROLD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600